

REMARKS

Upon entry of the present amendment, claims 1-10 are pending in the application, of which claims 1, 4, 7, and 9-11 are independent. New claims 9-10 have been added herein.

After careful consideration of the objections and rejections set forth in the Office Action, applicant respectfully submits that as amended, all pending claims patentably distinguish over the art of record, and requests allowance of all pending claims, as discussed further below.

Claim Objections

In item 2 of the above-identified Office Action, the Examiner objected to Claims 1-8 because of informalities. The informalities cited by the Examiner have been corrected per the suggestions of the Examiner as follows:

As regards claim 1, line 2, the word --a-- has been inserted before the word "2WD". In line 2, the word --a-- has been inserted before the word "4WD". In line 4, the phrase --the rotational speed-- has been changed to "a rotational speed". In line 6, the word --an-- has been inserted before the word "output". In line 20, the word --an-- has been inserted before the word "input".

As regards claim 4, line 2 the word --a-- has been inserted before the word "2WD". In line 2, the word --a-- has been inserted before the word "4WD". In line 7, the phrase --the rotational speed-- has been changed to "a rotational speed". In line 10, the word --an-- has been inserted before the word "output".

As regards claim 5, line 2, the word --an-- has been inserted before the word --input--.

As regards claim 7, line 2, the word --a-- has been inserted before the word "2WD". In line 2, the word --a-- has been inserted before the word "4WD". In line 5, the word --the-- has been inserted before the word "2WD". In line 5, the word --the-- has been inserted before the word

“4WD”.

The amendments herein to claims 1, 4, 5, and 7 have overcome the objections to the claims due to informalities.

Claim Rejections – 35 USC 112

In item 4 of the above-identified Office Action, the Examiner rejected Claims 1-6 and 8 under 35 USC 112, second paragraph, as indefinite.

The applicant thanks the Examiner for clarification of this rejection during a telephone conversation on October 28, 2004. In that conversation, the Examiner indicated that, in claim 1, line 5 and in claim 4, line 8, the phrase “the wheels” lacks antecedent basis. Although the phrase “for a wheeled vehicle” is presented in line 1 of each of these claims, the Examiner notes that a wheeled vehicle may have only one wheel, and subsequent references in the claim to plural wheels thus lacks an antecedent.

The applicant has amended claims 1 and 4 to recite “for a vehicle having a plurality of wheels”. The applicant considers these amendments to obviate the rejection under section 112, second paragraph.

Claim rejections – 35 USC 103

In item 6 of the Office Action, the Examiner rejected Claims 1- 8 under 35 USC 103(a) as unpatentable over Yamaguchi (US 6,466,855) in view of Yamamoto et al. (US 6,526,367). The Examiner stated that, in her view, Yamaguchi discloses a vehicle speed apparatus having wheel rotational sensors 52 FL, 52FR, 52RL, 52RR, a vehicle speed calculator 50, a drive mode sensor 18 for sensing whether the vehicle is in 2WD or 4WD mode by the position of a switch 26, and a first vehicle speed calculating unit and a second vehicle speed calculating unit which calculate the

vehicle speed based on output from the wheel rotational speed sensor and a respective predetermined condition.

The Examiner further states that, in her view, the only difference between Yamaguchi and the claimed invention is a speed display mechanism, and that Yamamoto et al disclose a wheel speed detecting apparatus including a display for displaying the vehicle speed calculated by the vehicle speed calculator. It is the Examiner's position that it would have been obvious to readily recognize the advantages and desirability of employing a display as suggested by Yamamoto et al to the apparatus of Yamaguchi to provide a visual output to the operator.

Upon review of these references, the applicant notes that Yamaguchi discloses a vehicle speed estimating apparatus for estimating vehicle speed for use in by a controller that performs control of vehicle behavior and traction. Yamaguchi discloses estimating vehicle speed based on wheel speeds and driving mode (2WD or 4WD). If the vehicle is in 2WD mode, the apparatus calculates the vehicle speed based on the **higher detected wheel speed sensor output** of one of the non-driven wheels. If the wheel is in 4WD mode, or if the drive mode is indeterminate, the apparatus sets vehicle speed based on the **lowest detected wheel speed sensor output** of any wheel of the vehicle. The determination of which wheel rotation speed sensor output is selected is based on driving mode, and it applicant's understanding from a review of this reference that according to the teaching of Yamaguchi, the selected wheel rotation speed is **set to be the same as the chosen sensor output**, without any further calculation.

This is in contrast to the applicant's invention, wherein a first calculation is provided for wheel speeds obtained in the 2WD mode, and a second calculation is provided for wheel speeds obtained in the 4WD mode.

The applicant respectfully disagrees with and traverses the rejection of claim 1, since

Yamaguchi does not disclose a first vehicle speed calculating unit and a second vehicle speed calculating unit as recited by the applicant in claim 1, but instead discloses a single electronic control unit 50 which receives a signal Vfl, Vfr, Vrl, Vrr which "is indicative of a wheel speed" (col 4, line 59) from the wheel speed sensor 52 of each wheel. ECU 50 sets **one of the signals Vfl, Vfr, Vrl, Vrr as the vehicle speed Vb** based upon the determined driving mode. The applicant respectfully asserts that there is no suggestion in Yamaguchi, or in Yamaguchi as modified by Yamamoto, to provide multiple speed calculating units. Thus the applicant respectfully submits that claim 1 is patentable over Yamaguchi as modified by Yamamoto.

As regards claim 2, the applicant respectfully disagrees with this rejection since Yamaguchi does not disclose calculation of vehicle speed as recited in this claim. Claim 2 recites the first vehicle speed calculating unit calculating the vehicle speed by using the output from the wheel rotational speed sensor and a first correction coefficient, and the second vehicle speed calculating unit calculating the vehicle speed using the output from the wheel rotational speed sensor and a second correction coefficient. Yamaguchi does not disclose multiple calculating units, but instead discloses a single ECU 50. Further, Yamaguchi does not disclose the use of a correction coefficient within the single calculation unit 50. Figure 2 of Yamaguchi discloses calculation of vehicle speed at steps 30 and 40, but the written disclosure is silent as to any specific calculation performed to convert the selected wheel speed sensor output Vfl, Vfr, Vrl, Vrr to the calculated vehicle speed Vb, instead, Yamaguchi teaches that the ECU 50 sets **one of the signals Vfl, Vfr, Vrl, Vrr as the vehicle speed Vb**. Therefore, the applicant respectfully submits that Yamaguchi does not disclose the use of any coefficient in the calculation of vehicle speed. Further, Yamaguchi does not disclose a first correction coefficient that is larger than the second correction coefficient, as recited in this claim. Because the features recited in claim 2 are not

disclosed or suggested by the cited prior art, the applicant respectfully submits that claim 2 is patentable over Yamaguchi as modified by Yamamoto.

As regards claim 3, this claim incorporates all of the limitations of claim 1 therein, and is distinguishable over the references of record as discussed above in connection with claim 1.

As regards claim 4, the applicant respectfully disagrees with this rejection since Yamaguchi does not disclose a vehicle speed calculator that corrects the sensed vehicle speed using a correction coefficient. The applicant asserts that the written disclosure of Yamaguchi is silent as to any specific calculation performed to convert the selected wheel speed sensor output V_{fl} , V_{fr} , V_{rl} , V_{rr} to the calculated vehicle speed V_b , and thus does not disclose the use of any coefficient in the calculation of vehicle speed. Further, Yamaguchi does not disclose correction of the sensed vehicle speed using a correction coefficient. Because the features recited in claim 4 are not disclosed or suggested by the cited prior art, the applicant respectfully submits that claim 4 is patentable over Yamaguchi as modified by Yamamoto.

As regards claim 5, the applicant respectfully disagrees with this rejection. Claim 5 recites selection of the correction coefficient based on input from the drive mode sensor. Because no correction coefficient, or coefficient of any kind, is disclosed by Yamaguchi, or by Yamaguchi as modified by Yamamoto, the applicant respectfully submits that claim 5 is allowable over all known references.

As regards claim 6, this claim incorporates all of the limitations of claim 1 therein, and is distinguishable over the references of record as discussed above in connection with claim 1.

As regards method claim 7, the applicant respectfully disagrees with this rejection. Method step 7c recites adjusting the uncorrected vehicle speed using a correction coefficient to generate a corrected vehicle speed. As discussed above, Yamaguchi does not disclose the use of any

coefficient in the calculation of vehicle speed, nor does Yamaguchi disclose correction of the sensed vehicle speed using a correction coefficient. Because the method steps recited in claim 7 are not disclosed or suggested by the cited prior art, the applicant respectfully submits that claim 7 is patentable over Yamaguchi as modified by Yamamoto.

As regards claim 8, the applicant respectfully disagrees with this rejection. Claim 8 recites that the method includes the correction coefficient is selected corresponding to the sensed drive mode. Because no correction coefficient, or coefficient of any kind, is disclosed by Yamaguchi, or by Yamaguchi as modified by Yamamoto, the applicant respectfully submits that claim 8 is in allowable condition.

Other Matters

The applicant has added new claims 9-10 are added herein to more clearly distinguish the applicant's invention from that disclosed by Yamaguchi as modified by Yamamoto. New claim 9 is based on original claim 1. It is directed to a vehicle display apparatus and includes added language which recites that the calculation performed by the first calculating unit is different from the calculation performed by the second calculating unit. This feature is not disclosed or suggested by Yamaguchi, or by Yamaguchi as modified by Yamamoto.

New claim 10 is similar to new claim 9 but is of different scope.

Each of these new claims patentably distinguish over the cited prior art since multiple calculating units, and/or multiple calculating steps are not disclosed by the cited prior art or any combination thereof. New claims 9-10 are fully supported by the specification. No new matter has been added by these amendments.

Conclusion

Based on all of the foregoing, applicant respectfully submits that all of the objections and rejections set forth in the Office Action are overcome, and that as presently amended, all of the pending claims are believed to be allowable over all of the references of record, whether considered singly or in combination. Applicant therefore requests reconsideration and withdrawal of the rejection of record, and allowance of the pending claims.

If the Examiner is not fully convinced of all of the claims now in the application, applicant respectfully requests that he telephonically contact applicant's undersigned representative to expeditiously resolve prosecution of the application.

The Commissioner is hereby authorized to charge the \$400.00 fee for two independent claims in excess of three to Deposit Account 50-0744 in the name of Carrier, Blackman & Associates, P.C.

A duplicate copy of this sheet is enclosed.

Favorable consideration is respectfully requested.

Respectfully submitted,



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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence is being transmitted, via facsimile, to the United States Patent and Trademark Office on December 30, 2004, at the number (703) 872-9306.

